

## Financing innovation in renewable energy

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# Financing Innovation in Renewable Energy

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by [Cian O'Donovan](#)

Global new investment in green energy technologies hit \$329 billion in 2015 [says Bloomberg New Energy Finance](#). That's a good thing right? Well, not necessarily. Knowledge is always partial, and despite impressive breadth of data gathering, some fundamentals remain unclear. That's where [Mariana Mazzucato](#) and [Gregor Semieniuk](#) came in, organising a special workshop on [Financing Innovation in Renewable Energy hosted by Bloomberg NEF](#) which asked, who is doing what, where and when?

The answers offered at the workshop, or occasionally the lack of them, pose serious research and policy challenges.

First, with regard to the data itself: what goes into the data, what does not, and who are the data collectors? As researchers and analysts we cannot always get the numbers and stakes that underlie investment deals. Sometimes this is cultural, as some countries are reluctant to disclose data. This means trends in the categories of investment, especially with organisations like the [China Development Bank](#), are very hard to get at.

Second, what does the data already collated tell us about the financing of green energy in 2016? We know we have an issue following on from [Basel III](#), a set of banking regulations which aimed to bring about more stability within the banking sector. Long-term, patient capital is now more difficult to raise. We see this in other sectors, such as green technology. The venture capitalists too have shorter exit windows.

So what does this do for the renewable energy industry? And do these two factors mean the development banks have to take a bigger role? If so, how is the public market creation agenda going to emerge to let this happen?

In terms of finance, renewable technologies have two important characteristics. They are highly sensitive to the cost of capital and are highly sensitive to policy. The former suggests that the European interest rate regime of the last few years was a perfect opportunity to deliver growth. The latter tells us it's a "perfectly missed opportunity".

The UK is an exemplar here. The coalition government most definitely did not fix the renewables roof while the sun was shining. Not only has this situation regressed under the current incumbents, it looks like they've knocked down the walls of the house to boot. Furthermore, despite the headline figures, it would seem from some of the discussion at the workshop, green energy finance is in less than robust health. According to a senior executive at one large financial player, utilities are walking wounded, commercial banks are in trouble, public funding is locked within the vault of austerity, and markets are our only hope. In other words, the pension funds and 'yield-cos', companies formed to own operating assets that produce a predictable cash flow, and other institutional investors looking for long-term yields are key potential investors in renewable energy.

Yet, these funds are significantly under-invested in green energy. Only 1-3% of pension fund assets are invested directly in infrastructure, and here lies an opportunity. But these investors are not motivated, and it's up to renewables boosters to transform their assets into a suitably attractive product.

Here then is the substantive issue of the day. How is the direction of development in the green energy sector set, and what role does finance have in this? This issue was addressed by Gregor Semieniuk at the workshop who reminded us that:

1. A) Finance is not neutral. Who finances what may impact direction and pace of renewable scale-up.
2. B) But we don't know much about sources or destination of finance, and
3. C) The biggest part, asset finance, is just a "green bar" and we never know about who is financing it.

Much emphasis has been on how public policies effect finance flows, but the actors are not distinguished between public and private, or institutional types. We're simply unsure about what their motivations for investing are. This brings us to directionality, and à la Andy Stirling's 2007 [contribution](#), the appropriate question follows: why do some energy infrastructures get funded and some do not?

To date, both investors and civil society advocates of renewables have explicitly privileged speed of scale-up over alternative considerations, such as distribution of benefits. Yet as lead renewable technologies such as onshore wind and solar PV gain cost of production parity with fossil production, we have some serious choices to make about whether there is a role for public market creation, how it is financed and how costs and benefits are distributed.

In other words, it may be time to reframe the policy prescriptions to move beyond addressing merely urgency and scale. The alternative course of action discussed in the previous paragraph sees the promotion of renewables as a type of game playing, wrapping assets up in attractive packages for institutional investors. And we have evidence



*Gregor Semieniuk from the University of Sussex, leads a discussion on who is financing renewable energy at the workshop. Image by Pelin Demirel.*

from the great crash of 2008 that the financialisation of fixed assets – in that case people's homes – **does not always end well**.

Bring together a large enough cohort of researchers, and a workshop will always produce more questions than answers. This was no different and a number of future challenges were substantiated. There is a significant challenge of governance levels. Can we afford to apply only national policy to global issues? Solar PV and wind in particular are now global industries with global value chains. So, how should a country like the UK identify where to make interventions? For example, if you are 'UK PLC', should interventions be made only at home, or also abroad? This is both a policy and research challenge.

We might also usefully ask what the mechanisms are by which flows of finance enter countries, particular developing countries. For example India's Prime Minister Narendra Modi's **alliance of industry and 120 nations investing in solar energy** made waves at COP21. It was a big deal, but how will the finance on this work? Conversely, we might ask, who benefits from a feed-in tariff introduced in Germany, the UK or Ireland, and where are they? This question gets to the heart of directionality issues. Who makes the decisions, where are they located, and what is the distribution of costs and benefits?

*Cian O'Donovan is a Research Fellow and co-ordinator of the Nexus Network at the **Science Policy Research Unit (SPRU)**. He tweets at [twitter.com/cian](https://twitter.com/cian)*

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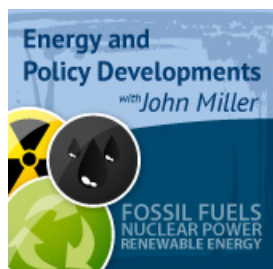
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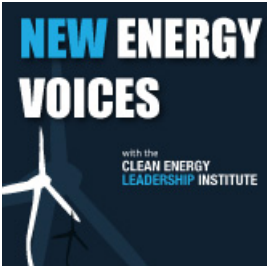
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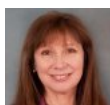
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